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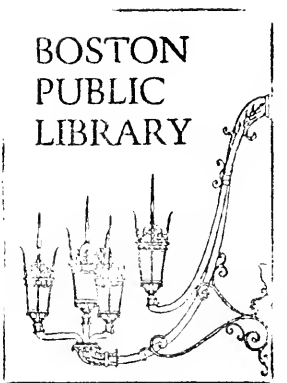
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September 8, 1988

Mr. Robert Walsh
Vice President
Real Estate Development
Prudential Property Company
Prudential Center
18th Floor, Suite 1800
Boston, MA 02199

RE: Prudential Center Redevelopment

Dear Mr. Walsh:

Enclosed is the Scoping Determination for the Prudential Center Redevelopment project (the "Proposed Project") for which you recently submitted a Project Notification Form ("PNF") pursuant to Article 31 of the Boston Zoning Code (the "Code"). The Scoping Determination requests information required by the Boston Redevelopment Authority ("BRA") in response to the PNF submitted.

Additional information may be required during the course of our review of the project. If you have any questions concerning the Scoping Determination or otherwise in connection with review of the proposed project, please contact Victor Karen at 722-4300, ext. 236.

Sincerely,

William D. Whitney
Assistant Director for
Urban Design and Development

Attachments

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SCOPING DETERMINATION
PRUDENTIAL CENTER REDEVELOPMENT

SUBMISSION REQUIREMENTS
FOR DRAFT PROJECT IMPACT REPORT (DPIR)

PROJECT NAME: Prudential Center Redevelopment

PROJECT LOCATION: Prudential Center

DEVELOPER: The Prudential Property Company, Inc.

PNF SUBMISSION DATE: June 28, 1988

This Scoping Determination is issued pursuant to Section 31-5 of the Boston Zoning Code. The Applicant filed a Project Notification Form ("PNF") on June 28, 1988. This Scoping Determination requests information required by the Boston Redevelopment Authority ("BRA") for its review of the proposed project in connection with the following:

a) Development Review pursuant to Article 31 of the code;

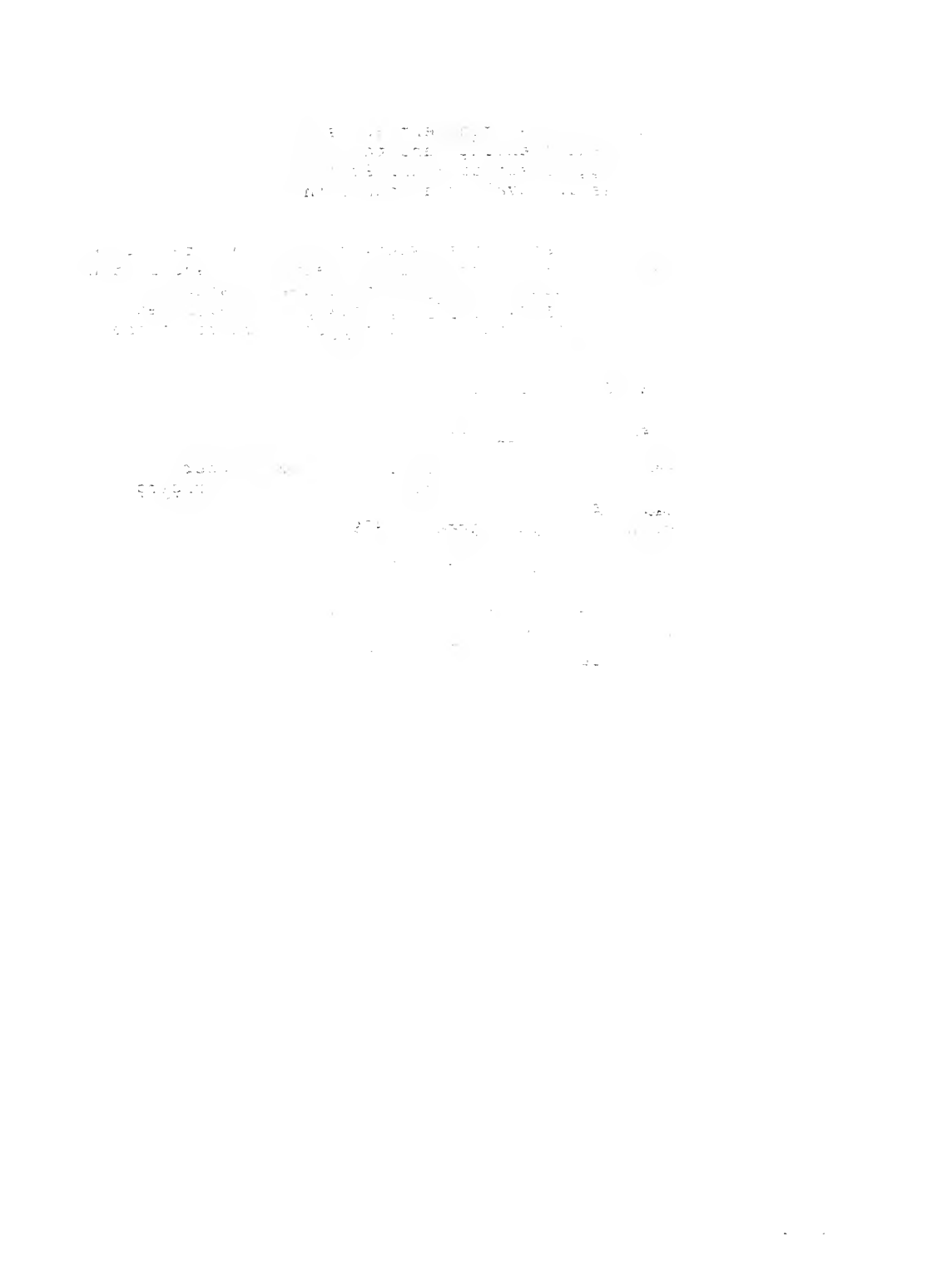
b) Decisions or recommendations with respect to zoning relief required for the Proposed Project; and

c) Approval of a Development Impact Project Plan, pursuant to Article 26A of the Code, and the entering of agreements for the Development Impact Project Contribution and Jobs Contribution Grant, pursuant to Articles 26A and 26B of the Code.

The Prudential Project Advisory Committee (PruPAC) was formed by Mayor Flynn in the fall of 1986 to prepare guidelines for the redevelopment of the Prudential Center. After an extensive community process, the PRUPAC adopted a set of guidelines on May 3, 1988. This Scoping Determination has been written with the advise of the PRUPAC. Three alternative build-outs which reflect a balance of impacts and benefits must be analyzed in the Draft Project Impact Report. Members of the PruPAC expressed interest in studying an alternative with increased retail space.

Based on the comments of the PruPAC, you may choose to submit an alternative which shows increased retail space.

As you know, the proposed project is governed by a 121A Agreement and is therefore subject to the conditions of the Agreement. Any



proposed changes to the 121A Agreement are subject to approval by the Boston Redevelopment Authority and the Mayor of the City of Boston. Approval of the Draft or Final Project Impact Report is not to be construed as approval of a change in status of the 121A Agreement.

The proposed project, located on a twenty seven acre site bounded by Huntington Avenue and Boylston, Exeter, Belvidere, and Dalton Streets, includes the creation of up to four new housing structures, three new office buildings, new and redeveloped retail space, and community space. The characteristics of the proposed project include:

Total Net New SF:	1,548,000
Office SF:	935,000
Residential SF:	372,000
Retail SF:	377,000*
Parking Spaces:	400 (As a result of better management and restriping)
Proposed Start of Construction:	3rd quarter, 1989
Proposed Completion:	3rd quarter, 2000

Under Article 27D of the Boston Zoning Code, the Downtown Interim Planning Overlay District, most of the proposed project is located in Subdistrict K, a Medium Growth Subdistrict. The remaining portion of the proposed project along Boylston Street is located in a B-8-120c district pursuant to the Boylston Street permanent zoning. In addition, the project is subject to an agreement between the City of Boston and the Prudential Insurance Company of America which designates the Prudential Center as a redevelopment project pursuant to Chapter 652 of the Acts of 1960, and Massachusetts General Law Chapter 121A. The project is also subject to Boston Redevelopment Authority review and approval pursuant to Article 31 of the Boston Zoning Code. The Draft Project Impact Report must conform to Article 31 and to this Scoping Determination and will be reviewed by the Prudential Project Advisory Committee (PruPAC).

In addition to full-size scale drawings, 25 copies of a bound booklet containing all of the following submission materials reduced to size 8½ x 11, except where otherwise specified, are required. In addition, an adequate number of copies must be available for community review.

* Includes 136,000 SF of existing retail space to be demolished and rebuilt

In this Scoping Determination, alternative development options are requested for various components. The three alternatives reflect a balance of considerations which must be taken into account in the development review process leading to the required Board of Appeal, BRA, and Massachusetts Environmental Policy Act (MEPA) approvals. For ease of reference, the alternatives are denoted as follows:

Square Footage

	Alt. A (PNF)	Alt. B	Alt. C
Office	935,000	800,000	750,000
Retail	241,000	200,000	150,000
Residential	372,000	350,000	300,000
Total	1,548,000	1,350,000	1,200,000

The development program for each alternative must be described in square feet of gross floor area as defined in Article 2-21 of the Boston Zoning Code. Accordingly, Alternative A would be described as a total of 1,829,000 FAR Gross Square Feet (1,085,000 office; 313,000 retail; 431,000 residential), and Alternatives B and C should be enumerated using the same building efficiency factors by use as those which result from Alternative A. Although the square foot area for each alternative has been determined, we recommend that a series of urban design studies be prepared in continuing consultation with the PruPAC and the BRA prior to initiating detailed transportation, environmental, architectural, and infrastructure analyses for the DPIR. The series of urban design studies is intended to lead to decisions on location, height, and massing for the entire site within the three density alternatives. Within each alternative, the studies might also reveal that square footage adjustments among different uses may be desirable. The Urban Design Component contains the variables to be studied prior to choosing the alternatives.

I. GENERAL INFORMATION

1. Applicant Information

A. Development Team

1. Names

a. Developer (including description of development or Chapter 121A entity)

b. Attorney

c. Project consultants

2. Business address and telephone number for each

3. Designated contact for each

4. Description of current or formerly-owned developments in Boston

B. Legal Information

1. Legal judgments or actions pending concerning the proposed project

2. History of tax arrears on property owned in Boston by development team

3. Evidence of site control over the project area, including current ownership and purchase options of all parcels in the proposed project, all restrictive covenants and contractual restrictions affecting the proponent's right or ability to accomplish the proposed project and the nature of the agreements for securing parcels not owned by the prospective developer

2. Financial Information
(See Appendix 1 for required financial information)

Development, Operating, and Sales Pro Formas should be provided for Alternatives A, B, and C.

A. Full disclosure of names and addresses of all financially involved participants and bank references

B. Development Pro Forma

C. Ten Year Operating Pro Forma

D. Sales Pro Forma

3. Project Area

A. Description of metes and bounds of project area

4. Public Benefits

A. Development Impact Project Contribution and Jobs Contribution Grant specifying amount of housing linkage and jobs linkage contributions and method of housing linkage contribution (housing payment or housing creation)

B. Increase in tax revenues, specifying existing and estimated future annual property taxes

C. Anticipated employment levels including the following:

1. Estimated number of construction jobs

2. Estimated number of permanent jobs

D. Submission of Boston Residents Construction Plan in accordance with the Boston Jobs Policy requiring that 50, 25, and 10 percent of person-hours in construction jobs on publicly-assisted and large-scale private commercial projects be worked by Boston residents, minorities and women, made effective as of July 12, 1985 by Executive Order, to Development Impact Projects

E. Submission of Voluntary Employment Opportunity Plan presenting good-faith efforts to achieve the goal that the profile of permanent employees in the building be 50 percent Boston residents

F. Other public benefits, such as voluntary provision of childcare facilities, etc.

5. Housing Study

Potential impact of the Prudential redevelopment on the existing housing market must be evaluated and provided as specified in the scope of services included in Appendix 3.

An overall housing program addressing the City's need for affordable housing must be provided, with particular attention devoted to the following:

A. Continuation of protections afforded existing Prudential tenants under the 121A Agreement and methods for achieving on-site affordability

B. Using linkage contributions for appropriately sited affordable housing construction primarily in surrounding residential neighborhoods (Prudential Center Apartments, Fenway, Back Bay, Bay Village, South End, St. Botolph Street, Lower Roxbury, Kenmore Square, Mission Hill, and Audubon Circle) desiring such housing as well as city-wide projects which may benefit from special opportunities that arise in the course of developing the overall program

C. Innovative programs such as homeownership opportunities and below market rate financing that draw on Prudential's unique position in the financial services and real estate development industries, and its on-going social investment programs

D. Opportunities for working with neighborhood-based non-profit housing developers, especially community development corporations primarily in surrounding residential neighborhoods and city-wide to take advantage of any special opportunities which may arise in the course of developing the overall program

E. Provisions for moderate-income housing

F. Creation of housing for the homeless and other special needs housing

The costs and benefits of on-site versus off-site affordable new construction must be evaluated.

6. Regulatory Controls and Permits

A. Existing zoning requirements, zoning computations, and any anticipated requests for zoning relief

B. Anticipated permits required from other local, state, and federal entities with a proposed application schedule

C. Because the Proposed Project is subject to the Massachusetts Environmental Policy Act (MEPA), required documentation including copies of the Environmental Notification Form and a proposed schedule for coordination with Article 31 procedures

7. Community Groups

A. Names and addresses of project area owners, displacees, abutters, and also any community groups which, in the opinion of the applicant, may be substantially interested in or affected by the proposed project

B. A list of meetings proposed and held with interested parties, including the following neighborhood groups:

1. PruPAC and its member organizations
2. Christian Science Church

II. TRANSPORTATION COMPONENT

The following requirements incorporate comments by the Boston Transportation Department (BTD) regarding transportation issues and objectives for the Prudential Center redevelopment.

The study must include the traffic impact area shown in Figure 1 in Appendix 5. The specific off-site intersection locations to be analyzed are also indicated in the figure.

Data on supply and usage characteristics of the various transportation systems within the study area must be provided. An extensive data base of recent transportation information prepared for other Back Bay projects for the study area exists. All relevant sources should be consulted. In addition, the Boston Transportation Department is expected to initiate its study of Back Bay shortly. Applicable data from that study must be included as it becomes available. Similarly, it is expected that the Prudential team will share available data regarding the Prudential Center Redevelopment Project with the BTD and its consultants.

The following must be submitted only for Alternative A except where otherwise noted.

Specific transportation-related elements which must be included in the Access Plan are defined below:

1. Vehicular Traffic

The following information must be provided for each alternative.

A. Projection of vehicular traffic demand and generation (daily including weekday A.M. and P.M. peak hours and Saturday peak hour)

B. Directional distribution, including a sensitivity analysis by use and size

C. Modal split and vehicle occupancy analysis

D. Circulation and access impacts on the local and regional street system and local intersections in the traffic impact area, including capacity and Level of Service (LOS) analyses

The impacts of the circulation pattern, queuing, and storage of trucks, MBTA buses and tour buses must also be studied.

The report must address the potential LOS impacts on intersections for which LOS may be affected by the following changes:

- Possible changes to access ramps to the Massachusetts Turnpike in cooperation with the BTD in addition to the existing Turnpike configuration
- Relocation of the garage entrance/exit along Boylston Street to the east of Fairfield Street
- Reorganization of loading docks in one location such as off Belvidere Street to relieve conflicts with the Massachusetts Turnpike

E. Analyses of the conditions and the impact of the proposed project at the intersections listed below must be analyzed for weekday AM and PM peak hour conditions. The Saturday peak conditions must be analyzed for the intersections denoted with an asterisk. Both weekday and Saturday analyses must be conducted under the following scenarios:

- Existing (1988 conditions)
- No Build for Prudential site, but with background area development included (1994 conditions)
- Build of initial phases as described in the PNF phasing plan (1994 conditions)
- No Build for Prudential site, but with background area development included (1999 conditions)
- Full Build (1999 conditions)

Analyses must be conducted using techniques described either in the 1985 Highway Capacity Manual or Circular 212.

For each intersection, if the comparison of the LOS for the no build scenario and for Alternative A in either 1994 or 1999 shows change by two or more grades or to a LOS of E or F, then Alternative B must be studied in the DPIR. If the comparison of the LOS for Alternative A and for Alternative B in either 1994 or 1999 shows change by two or more grades or to a LOS of E or F, then Alternative C must be studied in the DPIR.

Intersections to be studied:

1. Boylston Street/Clarendon Street
2. St. James Avenue/Clarendon Street
3. Boylston Street/Dartmouth Street
4. Huntington Avenue/Dartmouth Street/St. James Avenue/Blagden Street
5. Stuart Street/Dartmouth Street
*6. Boylston Street/Exeter Street
*7. Huntington Avenue/Exeter Street/Stuart Street
*8. Huntington Avenue/East Ring Road/Harcourt Street
*9. Huntington Avenue/West Newton Street/Belvidere Street
10. Columbus Avenue/West Newton Street
11. Massachusetts Avenue/Columbus Avenue
12. Massachusetts Avenue/Huntington Avenue
13. Massachusetts Avenue/Westland Avenue/St. Stephen Street
14. Massachusetts Avenue/Boylston Street
15. Massachusetts Avenue/Newbury Street
*16. Boylston Street/Dalton Street
*17. Newbury Street/Gloucester Street
*18. Newbury Street/Fairfield Street
19. Massachusetts Avenue/St. Botolph Street
*20. Belvidere Street/Dalton Street
21. Dartmouth Street/Commonwealth Avenue
22. Hereford Street/Marlborough Street
23. Berkeley Street/Marlborough Street
24. Beacon Street/Clarendon Street

Background projects to be included in the impact evaluation will be defined and reviewed with BRA and BTD staff prior to the analysis. Specific known background projects in the area that are expected to influence travel patterns in the 1994 conditions are listed in Appendix 4. The list includes uses and square footages of each of the anticipated develop-

ments. In addition, proposed or programmed improvements to the mass transit system (such as restoring Arborway service on the Green Line and changes to bus movements through the site) which would affect mass transit service must be included in the Transportation Access Plan analysis. For the period between 1994 and 1999, a general growth factor will be applied to determine an appropriate background level of traffic volumes to be used in the access plan analysis.

The status of these specific projects will be confirmed and additional projects may be identified and added, as necessary.

The results of surveys of selected Prudential Center user groups regarding travel habits and attitudes must be used to verify previous assumptions or estimates made about trip-making at the existing or future site.

2. Parking

A. Number of spaces provided indicating public and private allocation

B. Change in parking from current use of site

C. Proposed project's impact on demand for parking

D. Parking plan, including layout, access, size of spaces

E. Level of utilization of spaces by different user types and the degree to which joint use of spaces can result in increased efficiency of parking space supply (Information should be submitted for each alternative.)

F. Evidence of compliance with City of Boston parking freeze requirements

G. A discussion of the staging impacts of the project on parking supply must be presented. The analysis must compare long-term versus short-term parking needs.

3. Access

The following information must be provided for each alternative.

A. A description of internal vehicular circulation system including:

- o Numbers, directions and dimensions of travel lanes
- o Sight distances at intersections and around corners
- o Regulations pertaining to speed, right-of-way
- o Significant grade and elevation changes

B. Access, curb cuts, and/or sidewalk changes required

4. Loading

The following information must be provided for each alternative.

A. Number of docks

B. Location and dimension of docks

- o Studies of options for organizing loading docks in one location such as off Belvidere Street to relieve conflicts with the Massachusetts Turnpike exit must be included.

C. Demand generated by different uses

D. Potential traffic and pedestrian safety impacts

5. Public Transportation

A. Location and availability of existing and proposed public transportation facilities

B. Usage and capacity of existing system

C. Peak-hour demand and capacity analysis

D. Measures to encourage use of public transportation

Special attention must be given to any planned improvements to the Green Line at Prudential Station or other locations near the site. MBTA ridership data must be utilized and limited surveys must be conducted to identify changes in transit use due to recent modifications in Green Line, Orange Line, and commuter rail services. Access from the MBTA to primary off-site destinations, as well as to the Prudential Center, must be considered in any proposed station modifications.

6. Pedestrian Circulation

A. Illustrate or describe degree to which the network is publicly accessible in terms of: hours; coverage by security services; presence of retail generators and gathering places

B. As described in the Urban Design Component, studies of entryways into and out of the site including the Boylston Street, Belvidere Street, and Huntington Avenue entrances highlighting grade changes and proposed solutions including elevations, sections and plans

C. An evaluation of pedestrian conditions on sidewalks and intersections adjacent to the site

D. Sidewalk capacity analyses must include estimates of future no-build and full-build 1999 pedestrian volumes on adjacent sidewalk sections. These analyses must follow procedures prescribed either in the 1985 Highway Capacity Manual or in Urban Space for Pedestrians (Pushkarev and Zupan, MIT Press, Cambridge, 1975). Intersection capacity analyses must include specific pedestrian count data for the A.M., midday, and P.M. peak periods at the intersections indicated in Figure 2 of Appendix 5.

7. Sensitivity Analysis

In addition to the quantitative analysis prescribed above, a detailed qualitative sensitivity analysis must be conducted which clearly demonstrates the relative impacts of different land uses on trip generation rates and trip distribution patterns. The marginal impacts of changes in the quantity of each type of land use must be analyzed in such a way so as to demonstrate the transportation impacts which would accrue from development alternatives in addition to Alternatives A, B, and C.

8. Construction Management

The BTD requires the submission of Construction Management Plans for all major construction projects, detailing the construction period impacts and the measures necessary to mitigate them. The Access Plan must contain a general discussion of construction management issues and a list of appropriate mitigation measures, with particular attention paid to impacts on pedestrians.

The Construction Management program and procedures are outlined in separate guidelines available from the Operations Division of the Boston Transportation Department.

9. Mitigation Measures

A. Vehicular Traffic

Measures to alleviate vehicular traffic congestion, including:

- Encouragement of flexible work hours
- Establishment of Rideshare program
- Provision of a delivery service for neighborhood related retail uses, especially Star Market
- Potential changes to surrounding streets

B. Parking

Measures to manage parking demand and optimize use of available parking spaces, including:

- Proposed rate structure(s)
- Ride-sharing incentives and information dissemination
- Set-asides for high-occupancy vehicles: number and location
- Set-asides for after morning commuter peak (usually 9:30 or 10:00 A.M.)
- Delivery service from supermarket
- Use of spaces to result in increased efficiency of parking space supply

C. Access

Measures to improve legibility and functioning of interior street network, including:

- Relocation of garage entrance/exit along Boylston Street to the east of Fairfield, if appropriate
- Implementation of a comprehensive sign program

D. Loading

Measures to relieve conflicts caused by loading on the site, with particular attention paid to conflicts in the vicinity of the Massachusetts Turnpike exit, including:

- Consolidation of relocation of loading docks
- Provision of temporary storage areas at loading docks
- Restrictions on service and goods delivery

E. Public Transportation

Measures to encourage public transportation use, including:

- o Mass transit information dissemination
- o MBTA pass sales and subsidies
- o Direct station links or pedestrian connections
- o Measures to facilitate access to the Orange Line

F. Pedestrian Circulation

Measures to eliminate pedestrian circulation deficiencies, including:

- o Extension of hours of security protection
- o Widening or improving public sidewalks, if necessary

10. Monitoring and Reporting Measures

A. Measures for establishing compliance with the mitigation measures and monitoring measures

B. Monitoring transportation impacts of the built project

III. ENVIRONMENTAL PROTECTION COMPONENT

1. Wind

A qualitative analysis of pedestrian level wind impacts must be conducted for existing conditions and Alternatives A, B, and C after the initial urban design studies intended to lead to decisions on location, height and massing are completed.

A quantitative (wind tunnel) analysis of the potential pedestrian level wind impacts will be required for one alternative subsequent to evaluation of the qualitative analysis.

The wind tunnel analysis is intended to determine potential pedestrian level winds adjacent to and in the vicinity of the project site and must identify any area where wind velocities are expected to exceed acceptable levels, including the Authority's guideline of an effective gust velocity of 31 mph not to be exceeded more than 1% of the time. See Appendix 6.

Particular attention must be given to public and other areas of pedestrian use, including, but not limited to,

the entrances to the project and adjacent buildings, the Boylston, Exeter, Belvidere, and Dalton Streets, Huntington Avenue, and East Ring Road sidewalks, the Christian Science Mall, the proposed Boylston Street Plaza and other proposed project open space areas and pedestrianways. Specific locations to be evaluated must be determined in consultation with and with the approval of the BRA subsequent to review and approval of the qualitative analysis.

The quantitative wind tunnel testing must be conducted in accordance with the following guidelines and criteria:

A. The analysis must include the mean velocity exceeded 1% of the time and the effective gust velocity exceeded 1% of the time. The effective gust velocity must be computed as the hourly average velocity plus 1.5 x root mean square variation about the average. An alternative velocity analysis (e.g. equivalent average) may be presented with the approval of the Authority.

B. Wind direction must include the sixteen compass points. Data must include the percent or probability of occurrence from each direction on seasonal and annual bases.

C. Results of the wind tunnel testing must be presented in miles per hour (mph).

D. Velocities must be measured at a scale equivalent to an average height of 4.5 feet.

E. The model scale must be such that it matches the simulated earth's boundary and must include all buildings recently completed, under construction and planned within 2,000 feet of the project site. All buildings taller than 25 stories and within 2,400 feet of the project site must be placed at the appropriate location upstream of the project site during the test. A list of the projects to be included are attached in Appendix 4. Prior to testing, the model must be reviewed by the Authority. Photographs of the area model must be included in the written report.

F. Sampling time must be for about (166000/(m x Vgr)) sec, where m is the scale ratio (300-600) and Vgr the gradient velocity in the wind tunnel in mph. The measuring device used to measure the ground winds must have a flat frequency response from dc. to a cut-off frequency of ([m x Vgr]/720)hz.

G. The written report must compare mean and effective gust velocities on annual and seasonal bases, forfuture no build and full build conditions as of 1994 and 1999, and must provide a descriptive analysis of the wind environment and impacts for each sensor point, including such items as the source of the winds, direction, seasonal variations, etc. as applicable. The report must also include an analysis of the suitability of the locations for various activities (e.g., walking, eating, sitting, etc.) as appropriate, in accordance with recognized criteria.

H. The report must also include a description of the testing methodology and model, and a description of the procedure used to calculate the wind velocities (including data reduction and wind climate data). Detailed technical information and data may be included in a technical appendix but must be summarized in the main report.

I. The report must include maps indicating sensor locations and wind speed data, graphically indicating changes in wind speeds due to the project.

For areas where wind speeds are projected to exceed acceptable levels, measures to reduce wind speeds and to mitigate potential adverse impact must be identified and tested in the wind tunnel.

The criteria for acceptable wind conditions for various activities are included in Appendix 6.

2. Shadow

Shadow analyses must be performed for each building in Alternatives A, B, and C.

A shadow analysis must be performed for existing and full-build conditions for the hours 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal equinox, summer solstice, autumnal equinox, and winter solstice. It should be noted that due to time differences (daylight savings vs. standard), the autumnal equinox shadows would not be the same as the vernal equinox shadows and therefore separate shadow studies are required for the vernal and autumnal equinoxes.

Shadow analyses to be conducted for 10:00 a.m., 11:00 a.m., 12:00 noon, 1:00 p.m., and 2:00 p.m. for October 21 and November 21 are also required for each of the alternatives.

The shadow impact analysis must include net new shadows, as well as existing shadows and must clearly show the incremental impact of the proposed buildings. Shadows of surrounding buildings also must be included, as appropriate, to indicate clearly the new shadow impact of the project.

Particular attention must be given to existing or proposed public open spaces and major pedestrian areas, including, but not limited to, sidewalks surrounding the project site and the proposed project open spaces and pedestrianways.

Design or other mitigation measures to limit or minimize any adverse shadow impact must be identified and analyzed.

3. Daylight

A daylight analysis for no-build conditions and each alternative must be provided by measuring the percentage of skydome that is obstructed by the proposed project buildings. An area of particular interest is Boylston Street and Huntington Avenue.

4. Air Quality

An air quality analysis must be performed for Alternative A only.

The DPIR must describe the existing air quality in the project vicinity and must evaluate ambient levels to determine conformance with the National Ambient Air Quality Standards of the U.S. Environmental Protection Agency.

A future air quality (carbon monoxide) analysis is required for any intersection where level of service is expected to deteriorate to D as a result of the proposed project and the project causes a 10 percent increase in traffic or where the level of service is E or F and the project contributes to a reduction of LOS. The methodology and parameters of the traffic-related air quality analysis must be approved in advance by the Massachusetts Department of Environmental Quality Engineering and the Boston Redevelopment Authority. Mitigation measures to eliminate or avoid any violation of air quality standards must be described.

In addition, a description of any changes to the garage exhaust system, including location of exhaust vents and specifications, and an analysis of the impact on pedestrian level air quality from operation of any revised exhaust system is required. Measures to avoid any violation of air quality standards must be described.

5. Solid and Hazardous Waste

This information is required only for Alternative A.

The amount and method of demolition of the existing buildings and infrastructure on the project site must be described and the disposal site for the demolition debris must be identified. The Applicant must describe the removal and disposal of any asbestos material from buildings to be demolished.

The generation of solid wastes from the project and plans for removal and disposal including opportunities for future recycling must be described in the DPIR.

6. Noise

A noise analysis must be performed for Alternative A.

The Applicant must provide in the DPIR an evaluation of ambient noise levels to determine conformance with the Design Noise Levels established by the U.S. Department of Housing and Urban Development. Should excessive ambient noise levels exist, mitigation measures to reduce these levels to acceptable levels must be described in the DPIR.

Anticipated long-term noise increases from project-generated traffic and from the project's building mechanical equipment must be evaluated.

7. Construction Impacts

This information is required only for Alternative A except where noted.

A construction impact analysis which includes a description and evaluation of the following:

A. Potential dust and pollutant emissions and mitigation measures to control these emissions

B. Potential noise impact and mitigation measures to minimize increase in noise levels

C. Location of construction staging areas and construction worker parking

D. Construction schedule, including hours of construction activity

E. Access routes for construction trucks and anticipated volume of construction truck traffic (This information must be submitted for each alternative)

F. Foundation construction methodology, pile driving proposals, and measures to prevent any adverse impacts on adjacent buildings and utility lines, MBTA Green Line tunnels, the Massachusetts Turnpike and rail easements and on groundwater levels (This information must be submitted for each alternative)

G. Measures to protect the public safety

8. Rodent Control

A rodent control analysis must be performed for Alternative A.

An analysis of the impact of project construction on rodent populations and a description of the proposed rodent control program and compliance with applicable City and State regulatory requirements must be performed.

IV. URBAN DESIGN COMPONENT

Urban Design materials must be submitted for each alternative.

The following urban design objectives must be addressed in the analysis required in the Draft Project Impact Report. Section 27D-18 of the Boston Zoning Code requires that development within the Huntington Avenue/Prudential Center Special Study Area be in accordance with the following objectives:

- Development must emphasize the sense of human scale through familiar block and building sizes and shapes, modulated and detailed facades and storefronts, and articulated entryways.

- A mixed-use development, including office, retail, and residential uses to increase pedestrian activity along the street is also encouraged.

Following is the list of variables which must be addressed in the urban design studies that are recommended to be prepared in continuing consultation with the BRA and PruPAC prior to selecting the three specific alternatives to be studied in detail in the DPIR:

- Open space which is made more publicly accessible. Additional studies depicting the open space design as presented in the PNF may be submitted.

- Reconfiguration of the loading dock access along Huntington Avenue redesigned to create a more inviting pedestrian environment. At least one study must include moving the entrance along Huntington Avenue to eliminate the access road. At least one study must include moving the access to the loading docks to Belvidere Street. Additional studies depicting the access to the loading docks as presented in the PNF may be submitted.

- Entrances to Prudential Center that are more inviting, generous and more visible than those shown in the PNF.

- A coherent streetscape pattern must be studied along Huntington Avenue to give a sense of connection between Copley Square and the Symphony Hall area.

5. A mix of uses along Huntington Avenue is suggested. One study must include a residential or mixed use building on Huntington Avenue or Belvidere Street.

- One study must conform to the height limits established by the Boylston Street permanent zoning, Text Amendment Number 118.

- One study must include added height on the Huntington Avenue side up to 400' in order to decrease the site coverage, consolidate office use, or to allow housing in the Huntington Avenue/Belvidere Street building.

- A consistent cornice line along Huntington Avenue must be included for one of the studies.

- One study must include more office space and less residential space on Boylston Street.

- The present massing at the corner of Belvidere and Huntington Avenue is awkward and unresolved, and a

series of alternative massings must be studied. One study must include the creation of a plaza at the subway entrance on the corner without adversely affecting the importance of the continuous streetwall facade along Belvidere Street and Huntington Avenue. Particular attention must be paid to the relationship between the new building and the massing of the existing Christian Science center.

- One study must redistribute massing in order to reduce height on the Huntington Avenue building, with possible increased height on the Belvidere Street building.

- One study must include relocating the Boylston Street garage entrance to the east of Fairfield Street.

- One study must include an entrance to the project which lines up with the grid of Back Bay.

In order to determine that the proposed project is (a) architecturally compatible with surrounding structures; (b) exhibits an architectural concept that enhances the urban design features of the subdistrict in which it is located; (c) augments the quality of the pedestrian environment; and (d) is consistent with the established design guidelines that exist for the area, the following items must be submitted for each of the three alternatives (except where otherwise indicated), once the alternatives have been selected.

1. Written description of program elements and space allocation for each element including both proposed and existing open space and amount of square feet devoted to plazas or squares, the wintergarden, pedestrian walkways, and streets and sidewalks, as well as square footage numbers comparing enclosed versus exposed open space

2. Plan for the surrounding area and district and sections at an appropriate scale (1" = 50' or larger) showing relationships of the proposed project and alternatives to the surrounding area's and district's:

   A. massing

   B. building height

   C. scaling elements

   D. open space

   E. major topographic features

F. pedestrian and vehicular circulation

G. land use

3. Black and white 8"x10" photographs of the site and neighborhood (Information need only be submitted for Alternative A.)

4. Sketches, diagrams, and photographs where relevant, to clarify design issues and massing options to illustrate open versus enclosed spaces and public versus private open space showing spaces open on a 24 hour basis, proposed hours of public accessibility and locations of controlled access such as doors and security checks

5. Description of method of climate control for pedestrianways including awnings, roof coverings, etc.

6. Eye-level perspective (reproducible line drawings) showing the proposal in the context of the surrounding area

7. Aerial views of the project

8. Site sections at 1" = 40' or larger showing relationships to adjacent buildings and spaces

9. Site plan at an appropriate scale (1" = 40' or larger) showing:

   A. General relationships of proposed and existing adjacent buildings and open space

   B. Open spaces defined by buildings on adjacent parcels and across streets

   C. General location of pedestrianways, driveways, parking, service areas, streets, and major landscape features

   D. Pedestrian, handicapped, vehicular and service access and flow through the parcel and to adjacent areas

   E. Survey information, such as existing elevations, benchmarks, and utilities

   F. Phasing possibilities

G. Construction limits

H. Description in sufficient detail to demonstrate how the Boylston Street sidewalks comply with the Boylston Street streetscape plan

10. Elevations, sections, and plans at 1"=16' showing studies of entryways into and out of the site particularly the Boylston and Belvidere Streets and Huntington Avenue entrances highlighting grade changes and proposed solutions and the character of public streets through the project

11. Examples to illustrate form, character and proposed roof covering system of proposed public north/south pedestrianway

12. Cross sections at 1/8"= 1'=0" to show alternatives to arcades along Boylston Street and Huntington Avenue

13. Proposed schedule for development of project

14. Massing models showing each alternative at 1" = 40' (Same scale as the base model at Prudential)

Submission materials for Design Development and Contract Documents can be found in Appendix 2.

V. HISTORIC RESOURCES COMPONENT

An historic resources analysis must be performed for Alternative A.

1. Description of the project site with relation to the National and Massachusetts Register sites or districts and landmarks designated by the Boston Landmarks Commission as listed in the Project Notification Form, and possible effects on such sites, districts, or landmarks

VI. INFRASTRUCTURE SYSTEMS COMPONENT

An infrastructure impact analysis must be performed for each alternative.

1. Utility Systems

A. Estimated water consumption and sewage generation from the project

B. Description of the capacity and adequacy of water and sewer systems and an evaluation of the impacts of the project on these systems

C. Identification of measures to conserve resources, including any provisions for recycling

2. Energy

A. Description of energy requirements of the project and evaluation of project impacts on resources and supply

B. Description of measures to conserve energy usage and consideration of feasibility of including solar energy provisions or other on-site energy provisions

3. Water Quality

A. Description of the project's impacts on the water quality of Boston Harbor or other water bodies that could be affected by the project, if applicable

B. Description of mitigation measures to reduce or eliminate impacts on water quality

C. Description of measures to conserve water

D. Description of impact of on site storm drainage on water quality

Anticipated volume requirements/generation for water, sewage, and energy systems must be the factual lead items in a system-by-system discussion of impacts as described below.

The applicant's submission must include an evaluation of the proposed project's impact on the capacity and adequacy of existing water, sewerage, energy (including gas and steam), and electrical (including telephone, computer, cable, etc.) utility systems, and the need reasonably attributable to the proposed project for additional systems facilities.

1. Any system upgrading or connection requiring a significant public or utility investment, creating a significant disruption in vehicular or pedestrian circulation, or affecting any public or neighborhood park or streetscape improvements, comprises an impact which must be mitigated. The DPIR must describe anticipated impacts in this regard, including specific mitigation measures, and must include nearby proposed project build-out figures in the analysis. See Appendix 4 for a current list of projects.

2. The proposed project must also address relocation of and improvements to any active utility lines which cross the site. In addition, potential impacts on, or connections to, the existing Green Line MBTA facilities and Massachusetts Turnpike and railroad line routes, which flank the site to north and south and run through the project (respectively), must be included in this analysis.

3. Thorough consultation with the planners and engineers of the utilities is required and must be referenced in the Infrastructure Component. A presentation of the Prudential proposal, with special focus on infrastructure (and transportation and public improvements) issues before the Transportation Liaison Committee is strongly recommended.

Additional information required is described below.

4. If sedimentation problem in the Huntington Avenue (combined) sewer line occurs within the Prudential project area, analysis of whether Prudential can correct the problem must be submitted. This may help to relieve drainage difficulties in the St. Botolph area. The impact of additional sewage on the St. Botolph area sewer system must be studied.

5. Any circumstances which might result in backflow or capacity problems in the combined sewage lines must be described. For example, peak sewage generation during a high drainage runoff situation such as a hurricane or severe thunderstorm must be studied.

6. The location of transformer and other vaults required for electrical distribution must be chosen to minimize disruption to pedestrian paths and improvements both when operating normally and when being serviced and must be described.

7. Utility systems upgrading requirements must be a factor in planning service (i.e., gas). A scenario where this may impact adjacent public improvements (St. Botolph Street, Boylston Street sidewalks, Westland Triangle, etc.) must be addressed.

8. Communications system such as telephone, cable, computer etc. must be described.

9. Energy requirements for heating require further discussion. Information must include a description of natural gas as a suitable long-term choice, Boston

Thermal Energy's plans to continue to provide steam to the existing physical plant, and if a single system will prevail throughout or systems will vary location to location.

10. Any interruptions in service or new risks in this project associated with utility lines which run through the Prudential property area must be described.

11. The Prudential development interfaces with other, non-utility, infrastructure systems, such as the Massachusetts Turnpike, the railway, and the subways. A brief discussion of impacts and/or opportunities at these interfaces (i.e., new direct Green Line pedestrian connections, etc.) must be included. Discussion of these elements in either the Transportation or Urban Design Components must be referenced in this section.

APPENDICES

Appendix 1

REQUIRED FINANCIAL INFORMATION

REQUIRED FINANCIAL INFORMATION -- PRUDENTIAL CENTER

DEVELOPMENT PROFORMA includes all the information normally found in a development proforma, by phase. This includes, but is not limited to:

Land acquisition costs, per land square foot and total, by parcel.

Attribution of acquisition expense over project components. (per FAR square foot residential, office, parking, etc.)

All hard costs on a per-unit and total basis, by phase. (disaggregated into base building, tenant improvement work, rehabilitiation work, residential finishes, garage cost, site work, furniture, fixtures and equipment, etc.)

All soft costs on a per-unit and total basis, by phase. (disaggregated into individual line items such as architectural, engineering, legal, accounting and developer's fees and any other professional fees, insurance, permits, real estate tax during construction, etc.)

All contingencies on a per-unit and total basis, by phase (specify whether contingency is on hard cost, soft cost, or total cost).

All assumptions regarding financing terms on existing debt, acquisition, pre-development, and construction loans, by phase (including financing fees, interest rates, terms, drawdown assumptions, terms, participations, amortization).

Calculation of housing and jobs linkage obligation in accordance with Articles 26A and B, and anticipated payment method (over term of obligation or on a net present value basis).

Any other project-related expenses not within any of the above categories.

Calculation of total development cost by component, including total and per unit breakdown (e.g. per square foot office, residential, retail, etc., per parking space, etc.)

Sources of debt and equity for total project costs.

Appropriate return measures (return on equity, return on total development cost, internal rate of return; specify method of calculation and hurdle rates).

10-YEAR OPERATING PROFORMA includes all the information normally found in an operating proforma, on a yearly basis. This includes, but is not limited to:

Tabulation of gross and net (leasable) square feet for all commercial space.

Schedule of all rents on a per square foot and total basis (including anticipated garage rates and occupancy).

Anticipated operating expenses and real estate taxes on per square foot and total basis, and clear explanation of division of expenses between owner and tenant (includes all commercial space, hotel, and garage)

All other expense and vacancy assumptions set forth to calculate cash available for debt service.

Anticipated leasing patterns (5-yr, 10-yr, etc.), lease-up rates and calculation of operating deficits if any.

Tenant inducements including free rent, tenant improvement allowances, etc.

Calculation of debt service, before tax cash flow, debt coverage ratios.

Projected rental rates and operating expenses for any residential uses, including affordable housing.

SALES PROFORMA includes all the information normally found in a condominium sales proforma. This includes, but is not limited to:

Condominium sales prices per square foot and per unit, and per parking space.

Anticipated absorption rate and price escalation during sales period.

Selling expenses and carrying cost assumptions on unsold units.

Use of sales proceeds in balance of project (if any).

Appropriate return measures (return on total development cost, return on gross sales, etc.)

Appendix 2

SUBMISSION REQUIREMENTS FOR DESIGN DEVELOPMENT AND CONTRACT DOCUMENTS SUBMISSIONS

Phase II Submission: Design Development

1. Revised written description of project

2. Revised site sections

3. Revised site plan showing:

   a. Relationship of the proposed building and open space to existing adjacent buildings, open spaces, streets, and buildings and open spaces across streets

   b. Proposed site improvements and amenities including paving, landscaping, lighting and street furniture

   c. Building and site dimensions, including setbacks and other dimensions subject to zoning requirements

   d. Any site improvements or areas proposed to be developed by some other party (including identification of responsible party)

   e. Proposed site grading, including typical existing and proposed grades at parcel lines

4. Dimensioned drawings at an appropriate scale (e.g., 1" = 8') developed from approved schematic design drawings which reflect the impact of proposed structural and mechanical systems on the appearance of exterior facades, interior public spaces, and roofscape including:

   a. Building plans

   b. Preliminary structural drawings

   c. Preliminary mechanical drawings

   d. Sections

   e. Elevations showing the project in the context of the surrounding area as required by the Authority to illustrate relationships or character, scale and materials

5. Large-scale (e.g., 3/4" = 1'-0") typical exterior wall sections, elevations and details sufficient to describe specific architectural components and methods of their assembly

6. Outline specifications of all materials for site improvements, exterior facades, roofscape, and interior public spaces

7. Eye-level perspective drawings showing the project in the context of the surrounding area

8. Samples of all proposed exterior materials

9. Complete photo documentation (35 mm color slides) of above components including major changes from initial submission to project approval

Phase III Submission: Contract Documents

1. Final written description of project

2. A site plan showing all site development and landscape details for lighting, paving, planting, street furniture, utilities, grading, drainage, access, service, and parking

3. Complete architectural and engineering drawings and specifications

4. Full-size assemblies (at the project site) of exterior materials and details of construction

5. Eye-level perspective drawings or presentation model that accurately represents the project, and a rendered site plan showing all adjacent existing and proposed structures, streets and site improvements

6. Site and building plan at 1" = 100' for Authority's use in updating its 1" = 100' photogrammetric map sheets

Phase IV Submission: Construction Inspection

1. All contract addenda, proposed change orders, and other modifications and revisions of approved contract documents which affect site improvements, exterior facades, roofscape, and interior public spaces shall be submitted to the Authority prior to taking effect.

2. Shop drawings of architectural components which differ from or were not fully described in contract documents

Appendix 3

SCOPE OF SERVICES FOR
COMPREHENSIVE HOUSING IMPACT REPORT

Scope of Services for the Comprehensive Housing Impact Report

The consultant shall:

1. Determine the appropriate "market impact" areas for effective housing demand resulting from the Prudential redevelopment plans. The areas shall include at least the following neighborhoods: Prudential Center Apartments, Fenway, Back Bay, Bay Village, South End, St. Botolph Street, Lower Roxbury, Kenmore Square, Mission Hill, and Audubon Circle. Other relevant neighborhoods should be identified based not necessarily on geographic proximity but rather on transportation nodes that provide access to the Prudential Center or "soft spots" in the Boston metropolitan area offering housing opportunity areas for certain of the new employees.

2. Based on current or soon-to-be available "best estimates" of the size and character of the Prudential redevelopment labor force, construct a "household profile" of workers by salary and skill level. Age, family structure and household size should be estimated as should housing preference (ie. single family, condominium, rental, etc.) by income class. Emphasis should be placed on the character and scale of demand for affordable housing, where this demand will compete for affordable units, and what populations this competition may affect (See Note 1 on next page).

3. Estimate a minimum-maximum percentage range of these households in the direct demand, indirect demand and induced demand categories (See Note 2 on next page) that move into the market impact areas defined in (1) above. Establish a time-frame within which these moves can legitimately be ascribed to the Prudential redevelopment.

4. Explore supply side changes in the market impact areas during the period in which Prudential redevelopment workers are looking for housing and the relevance of those changes to the three kinds of demands discussed in (3) above.

5. Make explicit the "rules of thumb" used to determine: (1) which neighborhoods are to be included in the market impact areas; (2) the profile of workers in terms of income and housing choice; (3) the percentage and profile of households in each of the three demand categories presumed to move to the impact areas. Where possible base those rules not only on best professional practices but also on the actual experience of other major developments in Boston with characteristics like the Prudential redevelopment. Discuss the reasons for the choice of the rules followed.

6. Explore other pressures on the market impact areas from private development activity and increased housing demand as well as softening demand (eg. the condominium oversupply in Cambridge). Evaluate the impact of infrastructure development in Boston on the market areas as well as City policies with regard to zoning, rent control, condominium conversion, residency requirements, and local hiring, etc.

NOTES:

1. Affordable housing is defined as housing which is affordable to families earning less than 50% of median income ("low"), 50% to 80% of median income ("moderate"), and 80% to 120% of median income ("upper moderate").

2. Definitions: direct demand - households that move into the market impact area to work at the redeveloped Prudential Center; indirect demand - households that move into the market impact areas as a consequence of other firms expanding or starting because of the Prudential redevelopment; induced demand - households that move into the market impact area because of enhancement of quality of life in Boston of which the Prudential redevelopment is a contributing factor.

Appendix 4

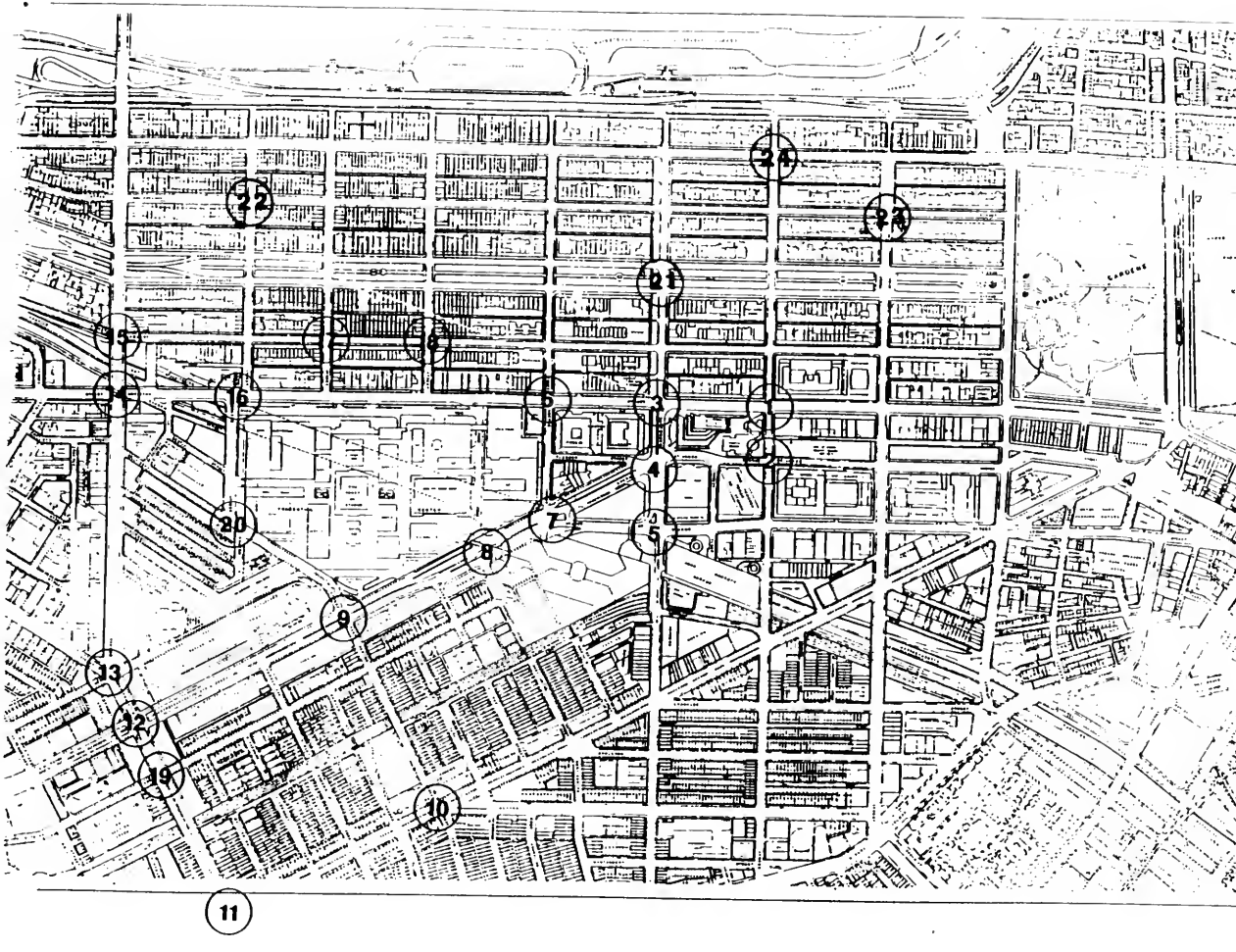
LIST OF PROPOSED PROJECTS AND PROJECTS UNDER CONSTRUCTION IN THE STUDY AREA

DATA ON SELECTED DEVELOPMENTS

PROJECT	TOTAL SF	OFFICE	RETAIL	RESIDENIAL
222 BERKELEY	505,000	470,000	35,000	
420 BOYLSTON	97,912	84,947	12,965	
425 BOYLSTON	32,000	29,000	3,000	
500 BOYLSTON	694,000	645,000	49,000	
745 BOYLSTON	112,000	102,000	10,000	
855 BOYLSTON	139,677	132,737	6,940	
30 GARRISON	43,046	0	0	52 units
32 GARRISON	86,494	0	0	74 units
25 HUNTINGTON	208,000	38,000	10,000	110 units
116 HUNTINGTON	252,700	239,000	13,700	
HYNES	590,000	(Convention Center)		
TENT CITY	255,740	0	6,750	270 units
360 NEWBURY	114,772	70,000	44,772	
PARCEL 6	93,000	25,000 (Theater)	3,000	70 units
PRINCE	68,100	0	24,900	36 units
56 ST. BOTOLPH	39,000	0	0	32 units

Appendix 5

INTERSECTIONS TO BE ANALYZED



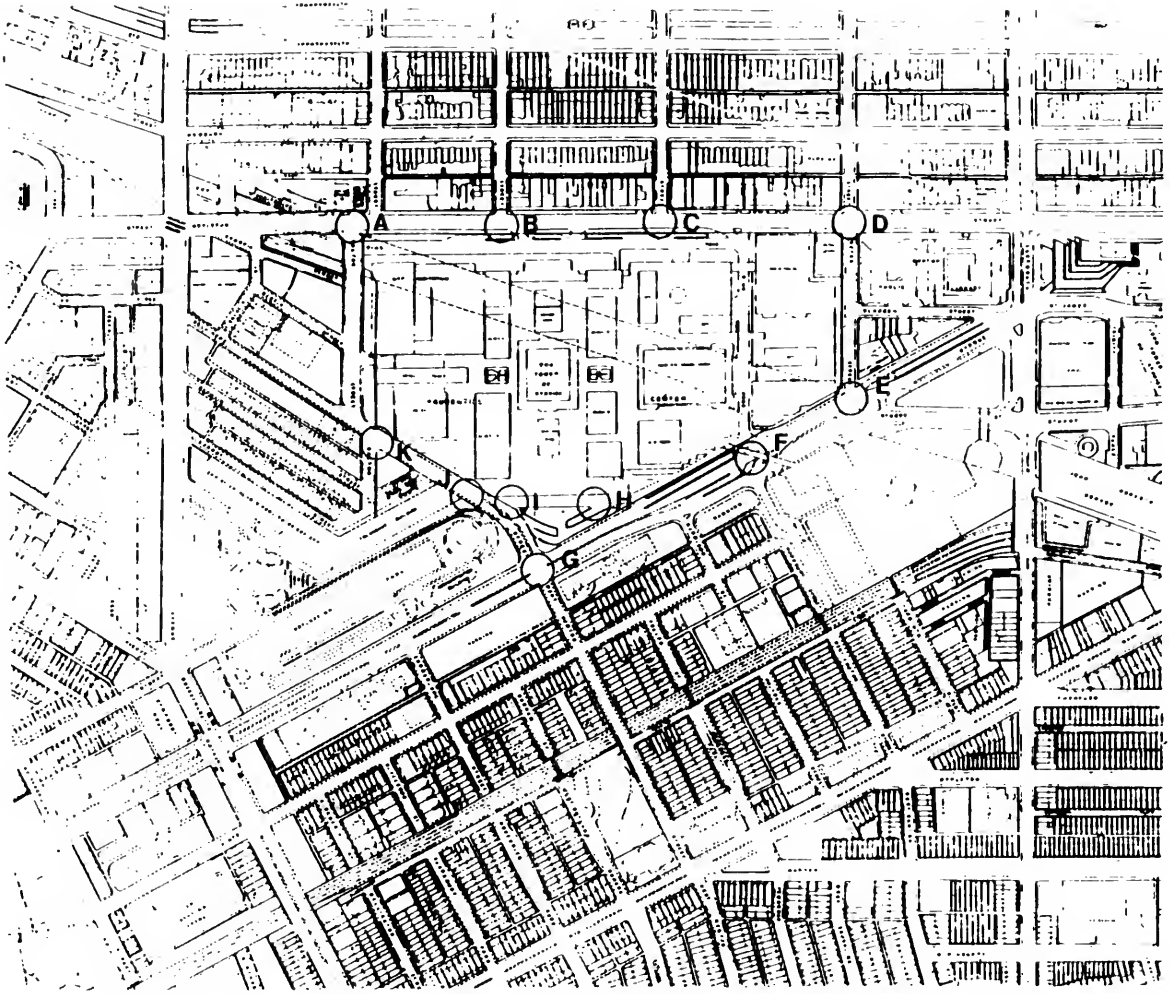
Prudential Center Redevelopment

Proposed Intersection Analysis Locations

Vanasse Hangen Brustlin, Inc

Scale: 1"=750'±

Fig. 1



Prudential Center Redevelopment

Pedestrian Access Analysis

Figure 2

APPENDIX 6

CRITERIA FOR ACCEPTABLE WIND CONDITIONS

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